

WHAT IS CLAIMED IS:

1. A device for driving a display apparatus having a plurality of display panels, said device comprising:

an interface circuit for receiving display data from
5 an external processor; and

a control register for storing drive-line-number information on a number of drive lines provided in each of said plurality of display panels, and panel-selection information for selecting one of said plurality of display
10 panels for said display data to be displayed on,

wherein

said interface circuit receives said drive-line-number information and said panel-selection information from said external processor prior to driving of said selected
15 display panel, and

said control register stores said drive-line-number information and said panel-selection information prior to the driving of said selected display panel in response to a demand from said external processor.

20

2. A device according to claim 1, further comprising:

a gray-scale voltage generating circuit for generating a plurality of gray scale voltages; and

a gray-scale voltage selector for selecting one from
25 among said plurality of gray scale voltages in accordance

with said display data, and outputs said selected gray scale voltage to said selected display panel via a corresponding one of data lines common to said plurality of display panels,

wherein said gray-scale voltage selector outputs said
5 selected gray scale voltage to said selected display panel in accordance with said display data, and outputs a gray scale voltage corresponding to one of black and white data to at least one unselected display panel of said plurality of display panels not selected by said panel-selection
10 information during a vertical blanking period of said selected display panel.

3. A device according to claim 2, wherein, prior to the driving of said selected display panel, said interface
15 circuit receives vertical-blanking-period information which is intended for said at least one unselected display panel during said vertical blanking period of said selected display panel, from said external processor, and prior to the driving of said selected display panel, said control
20 register stores said vertical-blanking-period information in response to a demand from said external processor.

4. A device according to claim 3, wherein said interface circuit receives said vertical-blanking-period
25 information from said external processor during the driving

of said selected display panel, and said control register replaces said vertical-blanking-period information which is previously stored with said vertical-blanking-period information which is newly received, during the displaying
5 of said selected display panel in response to a demand from said external processor.

5. A device according to claim 2, wherein said device further comprises a data converter circuit for converting
10 a data from said external processor into one of said black and white data and outputting said one of said black and white data to said gray-scale voltage selector during said vertical blanking period of said selected display panel.

15 6. A device according to claim 2, wherein said interface circuit receives said panel-selection information from said external processor during the displaying of said selected display panel, and said control register replaces said panel-selection information which is previously stored
20 with said panel-selection information which is newly received, during the displaying of said selected display panel in response to a demand from said external processor.

7. A device according to claim 2, wherein said
25 gray-scale voltage generating circuit ceases to operate

during a time interval when none of said plurality of display panels are not scanned by said scan line drive circuit.

8. A device for driving a display apparatus having
5 a display panel composed of a plurality of display regions,
said device comprising:

an interface circuit for receiving display data from
an external processor; and

a control register for storing drive-line-number
10 information on a number of drive lines provided in each of
said plurality of display regions, and region-selection
information for selecting one of said plurality of display
regions for said display data to be displayed on,

wherein

15 said interface circuit receives said drive-line-
number information and said region-selection information
from said external processor for each power turn-on of said
device, and

said control register stores said drive-line-number
20 information and said region-selection information in
response to a demand from said external processor for said
each power turn-on of said device.

9. A device according to claim 8, further comprising:
25 a gray-scale voltage generating circuit for generating

a plurality of gray scale voltages; and

a gray-scale voltage selector for selecting one from among said plurality of gray scale voltages in accordance with said display data, and outputs said selected gray scale
5 voltage to said selected display region via a corresponding one of data lines common to said plurality of display regions,

wherein said gray-scale voltage selector outputs said selected gray scale voltage to said selected display region in accordance with said display data, and outputs a gray scale
10 voltage relatively lower among said plurality of gray scale voltages to at least one unselected display region of said plurality of display regions not selected by said region-selection information during a vertical blanking period of said selected display region.

15

3

10. A device for driving a display apparatus having a main screen and a sub-screen, said device comprising:

an interface circuit for receiving display data from an external processor;

20 a gray-scale voltage generating circuit for generating a plurality of gray scale voltages;

a gray-scale voltage selector for selecting ones from among said plurality of gray scale voltages in accordance with said display data, and outputs said selected gray scale
25 voltages to said main screen and sub-screen via data lines

common to said main screen and sub-screen,

wherein,

in a first case in which said main screen is brought
into a display mode and said sub-screen is brought into a
5 non-display mode in compliance with an instruction from said
external processor, said gray-scale voltage selector outputs
said selected gray scale voltages to said main screen via
said data lines, and outputs a gray scale voltage relatively
lower among said plurality of gray scale voltages to said
10 sub-screen; and

in a second case in which said main screen is brought
into a non-display mode and said sub-screen is brought into
a display mode in compliance with an instruction from said
external processor, said gray-scale voltage selector outputs
15 said selected gray scale voltages to said sub-screen via said
data lines, and outputs a gray scale voltage relatively lower
among said plurality of gray scale voltages to said main
screen.

20 11. A device according to claim 10, wherein said
relatively lower gray scale voltage is a gray scale voltage
corresponding to one of black and white data.

25 12. A device according to claim 10,
wherein,

in said first case in which said main screen is brought into a display mode and said sub-screen is brought into a non-display mode in compliance with an instruction from said external processor, said gray-scale voltage selector outputs
5 said selected gray scale voltages to said main screen via said data lines, and outputs a gray scale voltage relatively lower among said plurality of gray scale voltages to said sub-screen during a vertical blanking period of said main screen; and

10 in said second case in which said main screen is brought into a non-display mode and said sub-screen is brought into a display mode in compliance with an instruction from said external processor, said gray-scale voltage selector outputs said selected gray scale voltages to said sub-screen via said
15 data lines, and outputs a gray scale voltage relatively lower among said plurality of gray scale voltages to said main screen during a vertical blanking period of said sub-screen.

13. A device according to claim 12, further comprising
20 a first scan line drive circuit for scanning said main screen, a second scan line drive circuit for scanning said sub-screen, and a timing generating circuit for generating timing signals for scanning said main screen and sub-screen and for
outputting said timing signals to said first and second scan
25 line drive circuits,

wherein,

in said first case in which said main screen is brought into a display mode and said sub-screen is brought into a non-display mode in compliance with an instruction from said external processor, said second scan line drive circuit scans said sub-screen in synchronism with said timing signals during said vertical blanking period of said main screen, and

in said second case in which said main screen is brought into a non-display mode and said sub-screen is brought into a display mode in compliance with an instruction from said external processor, said first scan line drive circuit scans said main screen in synchronism with said timing signals during said vertical blanking period of said sub-screen.

15

14. A device according to claim 12, further comprising a first scan line drive circuit for scanning said main screen, a second scan line drive circuit for scanning said sub-screen, and a timing generating circuit for generating timing signals for scanning said main screen and sub-screen and for outputting said timing signals to said first and second scan line drive circuits,

wherein,

in said first case in which said main screen is brought into a display mode and said sub-screen is brought into a

25

non-display mode in compliance with an instruction from said external processor, a frequency at which said first scan line drive circuit scans one picture on said main screen is higher than a frequency at which said second scan line drive circuit
5 scans one picture on said sub-screen; and

in said second case in which said main screen is brought into a non-display mode and said sub-screen is brought into a display mode in compliance with an instruction from said external processor, a frequency at which said first scan line
10 drive circuit scans one picture on said main screen is lower than a frequency at which said second scan line drive circuit scans one picture on said sub-screen.

15 15. A device according to claim 14,
wherein,

in said first case in which said main screen is brought into a display mode and said sub-screen is brought into a non-display mode in compliance with an instruction from said external processor, said second scan line drive circuit scans
20 one or two lines in said sub-screen each time each time said first scan line drive circuit scans one picture in said main screen; and

in said second case in which said main screen is brought into a non-display mode and said sub-screen is brought into
25 a display mode in compliance with an instruction from said

external processor, said first scan line drive circuit scans one or two lines in said sub-screen each time each time said second scan line drive circuit scans one picture in said sub-screen.